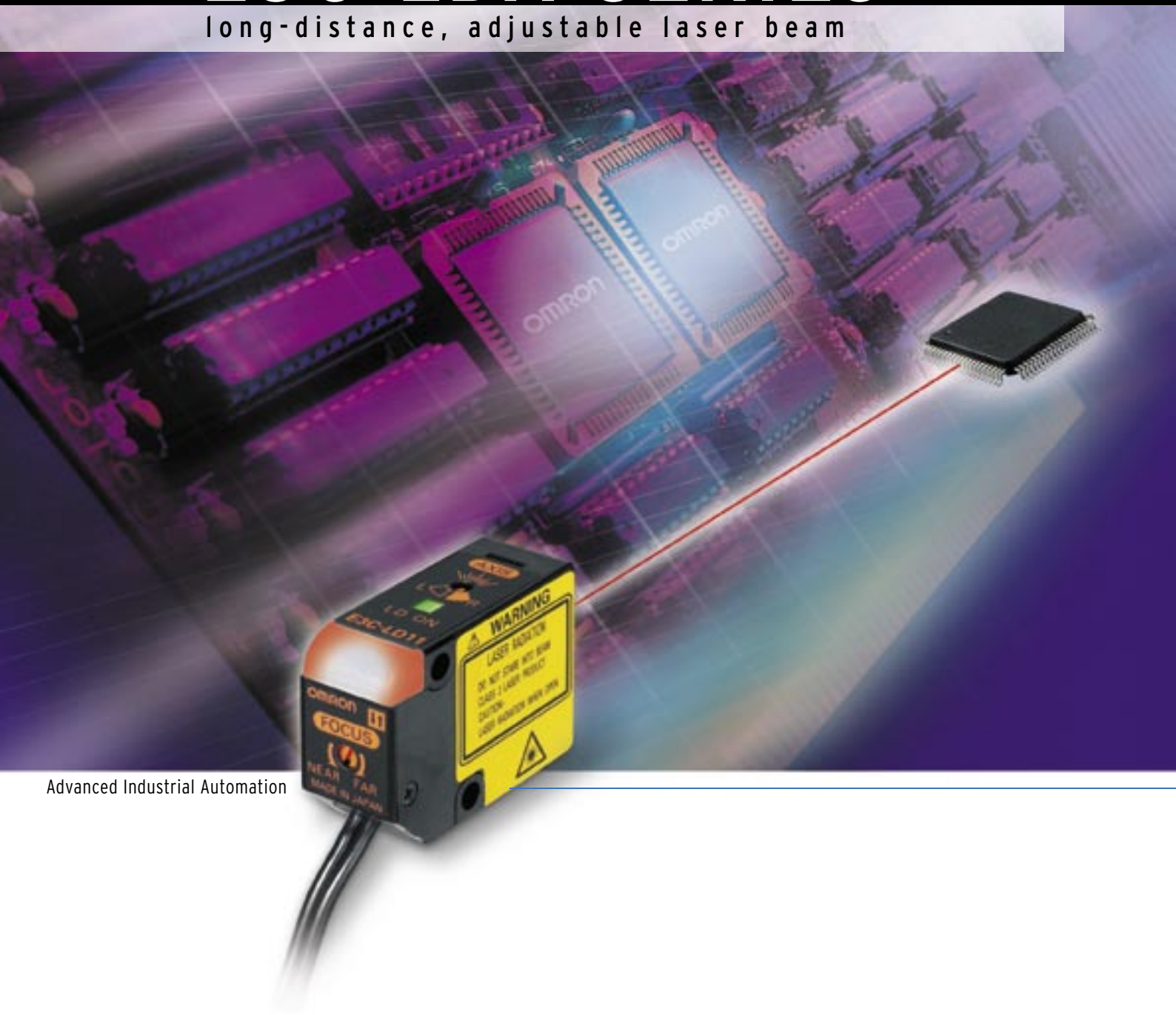
UPDATE

Photoelectric laser sensors

E3C-LDA SERIES

long-distance, adjustable laser beam



Advanced Industrial Automation

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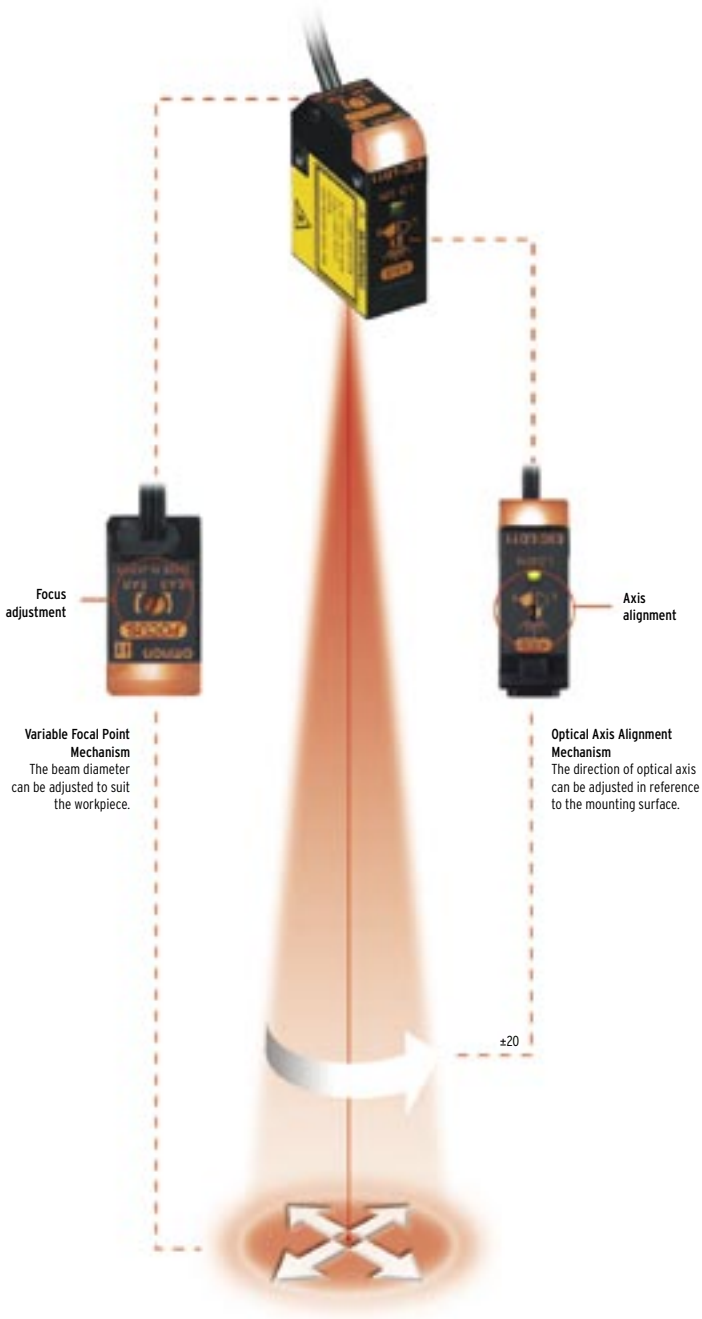
Omron's E3C-LDA photoelectric laser sensor series is designed to provide advanced object detection, positioning and high-resolution sensing. What's unique about the E3C-LDA is that the focal point and optical axis on the sensor head can be easily adjusted for precise beam adjustment, which in turn ensures easy set-up and very precise operation from a long distance. In addition, the E3C-LDA series offers multiple separate laser beam types – spot beam, line beam, area beam and retroreflective - to cover a multitude of applications!

Compact, fast and very accurate!

Its state-of-the-art construction, speed, accuracy and built-in reliability combine to make this very compact photoelectric sensor series ideal for use in today's production processes, where high precision and fast response time are vital. Typical applications include object detection in the semiconductor industry, grease, adhesive and seal inspection, assembly oriented applications in the automotive, pharmaceutical and packaging industries, and sheet displacement inspection in the paper industry.

E3C-LDA SERIES



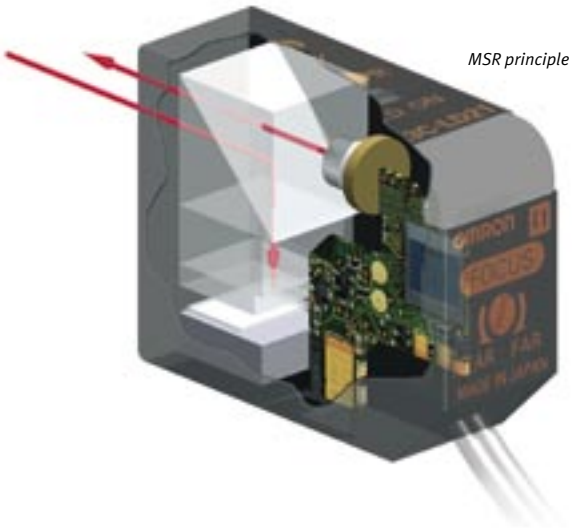
UNIQUE

Unique!
Adjustable settings for easy mounting and installation

The E3C-LDA is currently the only photoelectric sensor whose focal point and axis can be easily adjusted to provide optimum sensing capability. By varying the focal point mechanism (patent pending) you can adjust the beam diameter to suit the work-piece. This in turn improves the reliability of detection. Varying the axis alignment mechanism (patent pending) enables you to adjust the direction of the beam fan to the mounting surface. This feature is perfect for accurate, long-distance positioning applications.

Multiple optical beam shapes to choose from!

With just one sensor head (spot size, E3C-LD11) and two clip-on units (E39-P11 and E39-P21 lenses) the E3C-LDA series effectively offers multiple different beam shapes – spot, line, area beam or retroreflective. The E3C-LD31 unit provides the area beam, while the E3C-LD21 provides the line beam. This feature really extends the application possibilities of the sensor.



MSR principle

Spot size shape

Ideal for detecting minute items like IC-pins and for very precise positioning.

Line beam shape

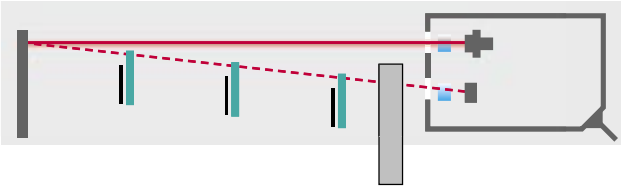
Ideal for detecting objects that are not fixed or for inspecting the completeness of parts. Typical application is edge control inspection.

Area beam shape

Ideal for printed mark detection or for basic object detection in the paper and wood industry.

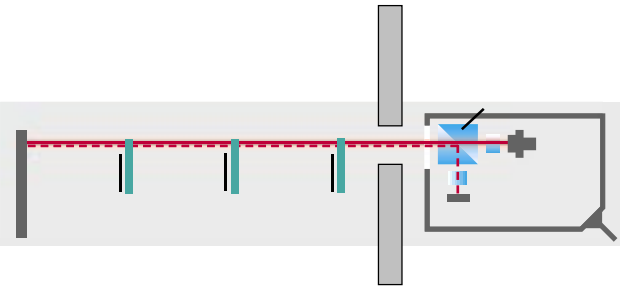
New! Retroreflective beam

This sensor combines high performance with easy installation and set-up. Using the new MSR sensing principle and small laser focus adjustment, this sensor achieves sensing distances of up to 7 metres with high-precision object detection. It is ideal for object detection through a small hole or gap in the assembly process. It can also be used for object detection through a glass view port in environmentally harsh processes.



Conventional principle

In areas where space is limited, the reflection of the object does not reach the receiver side.



New MSR principle

The E3C-LR enables highly accurate detection, even in a limited space area. Object detection is possible even through a small hole or gap, thanks to the coaxial (MSR) sensing principle.

Ultra-compact sensor head

The E3C-LD11 sensor head is very compact, which makes it easier to install and implement in production equipment.

Easy, reliable connection

E-Con* connectors enable fast, easy connection of the E3C-LDA sensor to the amplifier, using Omron's Plug & Play concept. This ensures fast, easy replacement of the sensor head when required, and easier maintenance. The E-Con connection also ensures reliable contact between the sensor and amplifier, and minimises possible mistakes by maintenance staff.

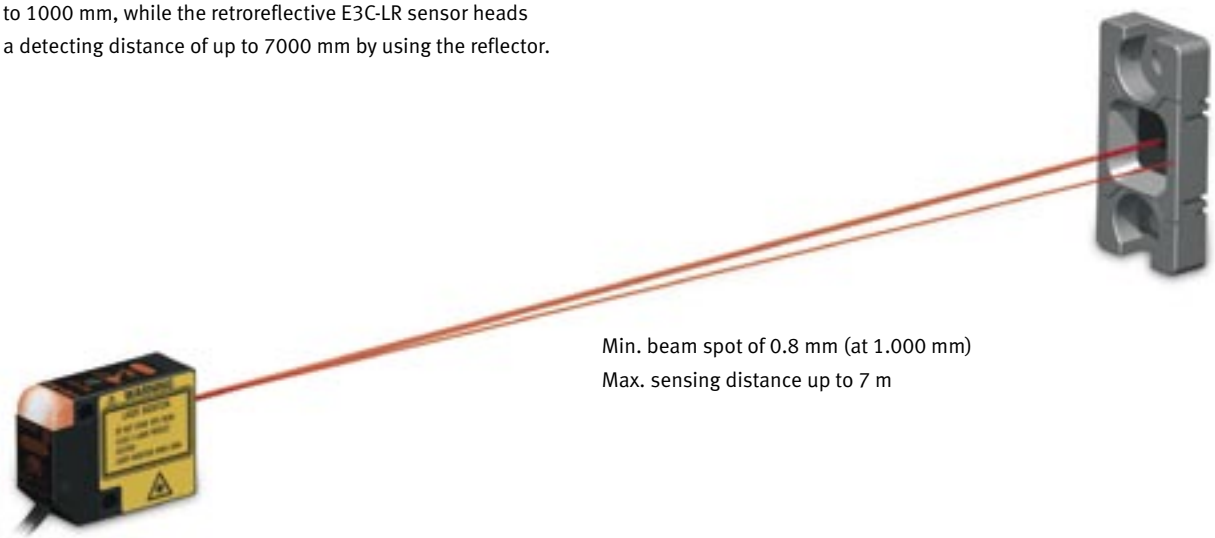
*Connectors comply with E-Con specifications.

Unique!
Sensing distance up to 7 metres!

The E3C-LD sensor heads have a detecting distance of up to 1000 mm, while the retroreflective E3C-LR sensor heads a detecting distance of up to 7000 mm by using the reflector.

This means that the sensor can be located away from moving parts in a production process and still function with great precision, so installation is fast and easy.

The retroreflective laser sensor has a sensing distance of up to 7 metres. It is also highly precise and easy to set up.



Min. beam spot of 0.8 mm (at 1.000 mm)
Max. sensing distance up to 7 m

Large, intelligent dual display 1

The slim-line amplifier's easy-to-read display provides a variety of display modes, including the incident light level and the threshold value. Threshold values can be easily set while checking incident light levels.

Mutual interference prevention

Up to 10 sensors can be combined very closely together without any mutual interference occurring between them. With this feature multiple measurements can be made in a machine or a process.

Timer functions

The E3C-LDA's amplifier features a variety of timer functions. It is possible to set up specific times for ON-delay, OFF-delay and One-shot operation functions. The counter mode counts objects in a process (count-up and count-down).

Differential output mode

The differential output mode provides stable detection during counting, and ignores unstable conditions in the production process.

Power tuning function 2

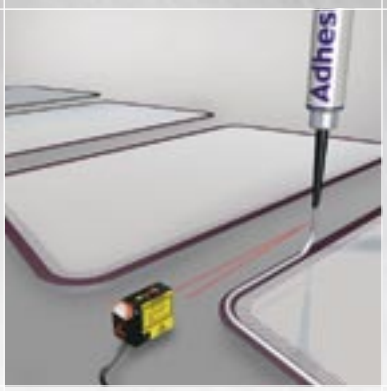
Omron's patented power tuning function provides optimal light level settings for all connected sensors. With just one touch you can adjust the light level settings of all connected amplifiers to the same level. This feature saves you time and money by eliminating labour-intensive adjustments.

Flexible control 3

An Omron mobile console (E3X-MC11-S) can be used for operating the sensor head when a considerable distance separates the sensor head and amplifier. All parameters and settings can be set up via this mobile console.**

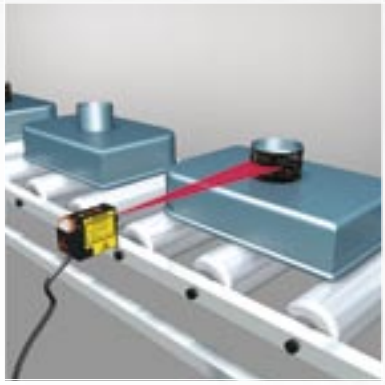
**Omron's fibre-optic series E3X-DA-S and E3X-MDA can also be combined and controlled by this mobile console.

Adhesive and seal application inspection



Glass detection through a view port

Grease application inspection

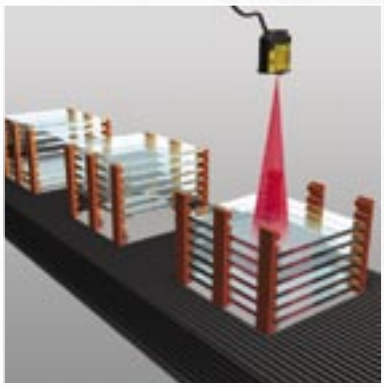


Repeated robot arm positioning teaching for calibration

Sheet displacement inspection

Inspection of fine pins

Existence of O-ring in the assembly process



Glass mapping

Sensor heads

Sensing method	Focus	Model number	Remarks
Diffuse reflective	Spot	E3C-LD11	Mounting a Beam Unit (sold separately) allows the use of line and area beams
	Line	E3C-LD21	This model number is for the set consisting of the E39-P11 mounted to the E3C-LD11
	Area	E3C-LD31	This model number is for the set consisting of the E39-P21 mounted to the E3C-LD11
Coaxial retroreflective	Spot (variable)	E3C-LR11*	Mounting a Beam Unit (sold separately) allows the use of line and area beams
	Spot (2.0-mm fixed dia.)	E3C-LR12*	

** Select a reflector (sold separately) according to the application.*

Amplifier units

Amplifier units with cables	Item		Appearance	Functions	Model NPN output	Model PNP output
	Advanced models	Twin-output models		Area output, self-diagnosis, differential operation	E3C-LDA11	E3C-LDA41
		External-output models		Remote setting, counter, differential operation	E3C-LDA21	E3C-LDA51
Amplifier units with connectors	Advanced models	Twin-output models		Area output, self-diagnosis, differential operation	E3C-LDA6	E3C-LDA8
		External-output models		Remote setting, counter, differential operation	E3C-LDA7	E3C-LDA9

The E3C-LDA series is the latest in a family of Omron sensor systems that include the E3X series, the ZX series, the ZX-E series and the ZS series.

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